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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/618,530 | 07/18/2000 | Loa Andersson | 2204/A21 | 8680 |
| 2101 | 7590 | 11/06/2003 | EXAMINER | |
| BROMBERG & SUNSTEIN LLP 125 SUMMER STREET BOSTON, MA 02110-1618 | | | DUONG, FRANK | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2666 | |

DATE MAILED: 11/06/2003

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- Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|-------------------------------|----------------------------------|--|
| Application No. 09/618,530 | Applicant(s) ANDERSSON ET AL. | |
| Examiner Frank Duong | Art Unit 2666 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 July 2000.
- 2a) This action is FINAL.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-49 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-49 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) Interview Summary (PTO-413) Paper No(s). _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other:

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DETAILED ACTION

1. This Office Action is a response to the communication dated 07/18/2000. Claims 1-49 are pending in the application.

Information Disclosure Statement

2. The information disclosure statement filed 7/18/00 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Goyal et al (USP 6,466,985) (hereinafter "Goyal").

Regarding **claim 1**, in accordance with Goyal reference entirety, Goyal discloses a method for establishing a label switched path by a first label switching device (108-112) to a second label switching device (108-112) in a communication network without

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using an explicit signaling protocol (*col. 4, lines 43-45 or col. 9, line 65*) (FIGs. 1-4), the method comprising:

allocating a new label for the label switched path (*FIG. 3; block 304 and col. 7, lines 48-49 and col. 10, lines 14-19*);

generating a labeled packet including the new label (*FIG. 3; block 306 and col. 7, lines 49-50*); and

forwarding the labeled packet to the second label switching device (*FIG. 3; block 308 and col. 7, lines 50-52*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Goyal further discloses wherein generating the labeled packet comprising: inserting the new label into the packet (*inherent in MPLS network*); and setting an indicator (*setting direction indicator in the first bit of the flow label*) in the packet to indicate that the packet is labeled (*col. 7, lines 53-64*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethertype field (first bit of the flow label) of the packet, and wherein setting the indicator in the packet to indicate that the packet is labeled comprising setting the ethertype field to a predetermined value (1 or 0) (*col. 7, lines 53-64*).

Regarding **claim 4**, in addition to features recited in base claim 2 (see rationales discussed above), Goyal further discloses wherein the indicator (first bit of the flow label) is a bit in a header field of the packet, and wherein setting the indicator in the

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packet to indicate that the packet is labeled comprising setting the bit to a predetermined value (1 or 0) (*col. 7, lines 53-64*).

Regarding **claim 5**, in addition to features recited in base claim 1 (see rationales discussed above), Goyal further discloses adding a forwarding table entry to a forwarding table (*see FIG. 2; block 208 and col. 8, lines 9-10 and lines 27-29*), the forwarding table entry mapping the new label to a forwarding equivalence class and outgoing interface for the label switched path (*inherent in MPLS network or col. 8, lines 29-31*).

Regarding **claim 6**, in addition to features recited in base claim 5 (see rationales discussed above), Goyal further discloses wherein the forwarding table is associated with the outgoing interface for the label switched path (*see col. 8, lines 29-31*).

Regarding **claim 7**, in addition to features recited in base claim 1 (see rationales discussed above), Goyal further discloses terminating (*virtual termination of many tunnels*) use of the label switched path (*col. 6, lines 1-9*); and forwarding unlabeled packets to the second label switching device (*col. 6, lines 1-9; end node (not shown)*). *It is inherent to received unlabeled packet at the end node in the MPLS network*.

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales discussed above), Goyal further discloses removing a forwarding table entry from a forwarding table (*col. 9, lines 65-67; "use it or loose it"*), the forwarding table entry mapping the new label to a forwarding equivalence class and outgoing interface for the label switched path (*see col. 10, lines 14-49*).

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Regarding **claim 9**, in accordance with Goyal reference entirety, Goyal discloses a label switching device (*FIG. 2 and col. 6, line 53 to col. 7, line 44*) comprising:

an outgoing interface (212) providing an interface for communicating with a second label switching device (*FIG. 1; 108-112*); and

packet processing logic (202) operably coupled to allocated a new label for a new label switched path to the second label switching device and to forward a labeled packet including the new label to the second label switching device over the outgoing interface (*see FIGs 3-4 and col. 7, line 45 to col. 10, line 49*) without first explicitly establishing the new label switched path to the second label switching device using a signaling protocol (*col. 9, line 65*).

Regarding **claim 10**, in addition to features recited in base claim 10 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) comprises:

label switching logic (202) operably coupled to decide to established the new label switched path (*col. 7, lines 45-64*);

label allocation logic (202) operably coupled to allocated the new label for the new label switched path (*col. 7, lines 45-64*); and

packet labeling logic (202) operably coupled to inserted new label in the packet and set an indicator in the packet (first bit of the flow label) to indicate that the packet is labeled (*col. 7, lines 45-64*).

Regarding **claim 11**, in addition to features recited in base claim 10 (see rationales discussed above), Goyal further discloses wherein the indicator is an

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ethertype field of the packet (first bit of the flow label), and wherein the packet labeling logic is operably coupled to set the bit to a predetermined value (1 or 0) to indicate that the packet is labeled (*see col. 7, lines 53-64*).

Regarding **claim 12**, in addition to features recited in base claim 10 (see rationales discussed above), Goyal further discloses wherein the indicator is a bit in a header field of the packet (first bit of the flow label), and wherein the packet labeling logic is operably coupled to set the bit to a predetermined value (1 or 0) to indicate that the packet is labeled (*see col. 7, lines 53-64*).

Regarding **claim 13**, in addition to features recited in base claim 9 (see rationales discussed above), Goyal further discloses a forwarding table (208) associated with the outgoing interface (*col. 8, lines 29-30*).

Regarding **claim 14**, in addition to features recited in base claim 13 (see rationales discussed above), Goyal further discloses wherein the packet processing logic further comprises label switched path setup logic (202) operably coupled to added a forwarding table entry (*col. 8, lines 9-10*) to the forwarding table (208), the forwarding table entry mapping the new label to a forwarding equivalence class and the outgoing interface for the label switched path (*inherent in MPLS network or col. 8, lines 29-31*).

Regarding **claim 15**, in addition to features recited in base claim 9 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) is operably coupled to forward unlabeled packet to the second label switching device over the outgoing interface upon deciding to stop using the label

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switched path (*col. 6, lines 1-9; end node (not shown). It is inherent to received unlabeled packet at the end node in the MPLS network*).

Regarding **claim 16**, in addition to features recited in base claim 9 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) is operably coupled to remove a forwarding table entry from a forwarding table associated with the outgoing interface (*inherent or "use it or loose it" at col. 9, line 66*), the forwarding table entry mapping the new label to a forwarding equivalence class and the outgoing interface for the label switched path (*inherent in MPLS network or col. 8, lines 29-31*).

Regarding **claims 17-23**, the claims call for a computer program of claims 9-16. Thus, the same rationales applied in the rejection of claims 9-16 are applied because router 200 of FIG. 2 is a software-driven router.

Regarding **claim 24**, in accordance with Goyal reference entirety, Goyal discloses a method for establishing a label switched path to a first label switching device in a communication network (FIGs. 1-4) without using an explicit signaling protocol (*col. 9, line 65*), the method (*col. 7, line 45 to col. 10, line 49*) comprising:

receiving a labeled packet including a new label from a second label switching device (FIG. 4; block 402 and *col. 8, lines 1-2*); and

setting the label switched path using the new label (*FIG. 4; blocks 404-412 and col. 8, lines 2-19*).

Regarding **claim 25**, in addition to feature recited in base claim 24 (see rationales discussed above), Goyal further discloses wherein receiving the labeled

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packet comprises receiving a packet including the new label (col. 7, line 49) and an indicator indicating that the packet is labeled (*col. 7, lines 53-64*).

Regarding **claim 26**, in addition to feature recited in base claim 25 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethertype field of the packet, and wherein the ethertype field (first bit of the flow label) is set to a predetermined value (1 or 0) to indicate that the packet is labeled (flow direction).

Regarding **claim 27**, in addition to feature recited in base claim 25 (see rationales discussed above), Goyal further discloses wherein the indicator is a bit in a header field of the packet, and wherein the bit is set to a predetermined value to indicate that the packet is labeled (flow direction) (*col. 7, lines 53-64*).

Regarding **claim 28**, in addition to feature recited in base claim 24 (see rationales discussed above), Goyal further discloses wherein setting up the label switched path using the new label comprises:

determining a forwarding equivalence class and outgoing interface for the packet based upon network layer addressing information in the packet (*col. 8, lines 10-11*); and

adding a forwarding table entry to a forwarding table (208) (*col. 8, lines 9-10*), the forwarding table entry mapping the new label to the forwarding equivalence class and outgoing interface for the packet (*inherent in MPLS network or col. 8, lines 29-31*).

Regarding **claim 29**, in addition to feature recited in base claim 26 (see rationales discussed above), Goyal further discloses forwarding the packet based upon the network layer addressing information in the packet (*see col. 7, line 14; routing table*

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or IPv4 or IPv6 is supported in routing by Goyal invention as discussed in Goyal reference).

Regarding **claim 30**, in accordance with Goyal reference entirety, Goyal discloses a label switching device (*FIG. 2 and col. 6, line 53 to col. 7, line 44*) comprising:

an incoming interface (212) providing an interface for communicating with a second label switching device (*FIG. 1; 108-112*); and

packet processing logic (202) operably coupled to received a labeled packet including a new label for a new label from the second label switching device over the incoming interface without first explicitly establishing the new label switched path from the second label switching device to the first label switching device using a signaling protocol (*col. 9, line 65*) and to set up the switched path using the new label (see *FIGs 3-4 and col. 7, line 45 to col. 10, line 49*).

Regarding **claim 31**, in addition to features recited in base claim 30 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) comprises:

label detection logic (202) operably coupled to determined that the received packet is labeled (*col. 7, lines 45-64*);

label switching logic (202) responsive to the label detection logic and operably coupled to determine that the labeled packet is not associated with an existing label switched path (*col. 7, lines 45-64*); and

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label switched path set up logic (202) responsive to the label switching logic and operably coupled to set up the label switched path using the new label (*col. 7, lines 45-64*).

Regarding **claim 32**, in addition to features recited in base claim 31 (see rationales discussed above), Goyal further discloses wherein the labeled packet includes the new label and an indicator indicates that the packet is labeled (see *col. 7, lines 53-64*) and wherein the label detection logic is operably coupled to determine that the receive packet is labeled based upon the indicator (*col. 7, lines 45-64*).

Regarding **claim 33**, in addition to features recited in base claim 32 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethertype field of the packet (first bit of the flow label), and wherein the ethertype field is set to a predetermined value (1 or 0) to indicate that the packet is labeled (see *col. 7, lines 53-64*).

Regarding **claim 34**, in addition to features recited in base claim 32 (see rationales discussed above), Goyal further discloses wherein the indicator is a bit in a header field of the packet (first bit of the flow label), and wherein the bit is set to a predetermined value (1 or 0) to indicate that the packet is labeled (see *col. 7, lines 53-64*).

Regarding **claim 35**, in addition to features recited in base claim 31 (see rationales discussed above), Goyal further discloses wherein the label switched path setup logic (202) is operably coupled to determine a forwarding equivalence class and outgoing interface for the packet based upon network layer addressing information in

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the packet (col. 8, lines 1-8 and thereafter) and add a forwarding table entry to a forwarding table (col. 8, lines 9-10), the forwarding table entry mapping the new label to the forwarding equivalence class and outgoing interface for the packet (col. 8, lines 10-19 and thereafter).

Regarding **claim 36**, in addition to features recited in base claim 31 (see rationales discussed above), Goyal further discloses routing logic (202) responsive to the label switched path setup logic and operably coupled to forward the packet based upon the network layer addressing information in the packet (*col. 7, lines 10-19 or col. 10, line 60*).

Regarding **claims 37-43**, the claims call for a computer program of claims 30-36. Thus, the same rationales applied in the rejection of claims 30-36 are applied because router 200 of FIG. 2 is a software-driven router.

Regarding **claim 44**, in accordance with Goyal reference entirety, Goyal discloses an MPLS network (col. 4, lines 52-59) comprising LSRs (108-112) use a packet-driven mechanism (202) to established a label switched path (col. 7, line 1 to col. 11, line 5) without first explicitly establishing the label switched path using a signaling protocol (col. 9, line 65).

Regarding **claims 45-46**, see col. 7, line 1 to col. 11 and the rationales discussed above.

Regarding **claims 47-49**, in accordance with Goyal reference entirety, Goyal discloses a communication message comprising a new label for a label switched path to be established (col. 7, lines 48-49) and a label indicator indicating that the protocol

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message is labeled (col. 7, lines 49-50), wherein the label indicator comprises a field having a predetermined value (0 or 1) for indicating that the protocol message is labeled (col. 7, lines 53-63).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Viswanathan et al, Evolution of Multiprotocol Label Switching, IEEE, pages 165-173, May 1998.

Ryan, Multiprotocol Label Switching (MPLS), Technology Guide, pages 1-49, 1998.

Rekhter et al (USP 6,339,595).

Katsube et al (USP 6,188,689).

Tappan (USP 5,991,300).

Rekhter (USP 5,917,820).

Nagami et al (USP 5,822,319).

Acharya et al (USP 5,903,559).

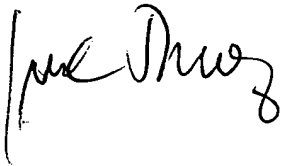
Lyon et al (USP 5,892,924).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

A handwritten signature in black ink, appearing to read "Frank Duong". The signature is written in a cursive style with a vertical line on the left side.

Frank Duong
October 29, 2003